

### **Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

### **Listing of Claims:**

1. (currently amended) A fermentation medium comprising a fermenting microorganism and a cytokinin-containing preparation that comprises a cytokinin at a concentration of at least 1 microMolar and wherein the cytokinin is effective to increase conversion of one or more products in the fermentation of the microorganism in the fermentation medium to a desired product by the microorganism as compared to conversion in a medium without the cytokinin-containing preparation using otherwise identical fermentation conditions.
2. (original) The fermentation medium of claim 1 wherein the cytokinin-containing preparation comprises a synthetic cytokinin having a purine heterocyclic base or a pyrimidine heterocyclic base.
3. (original) The fermentation medium of claim 2 wherein the purine heterocyclic base is an N<sup>6</sup>-substituted adenine or an optionally N<sup>6</sup>-substituted guanine.
4. (original) The fermentation medium of claim 2 wherein the synthetic cytokinin is selected from the group consisting of N<sup>6</sup>-benzyladenine, N<sup>6</sup>-benzyladenosine, N<sup>6</sup>-benzyladenine-3-glucoside, N<sup>6</sup>-benzyladenine-7-glucoside, N<sup>6</sup>-benzyladenine-9-glucoside, N<sup>6</sup>-benzyl-9-(2-tetrahydropyranyl)adenine, N<sup>6</sup>-benzyladenosine-5'-monophosphate, N<sup>6</sup>-gamma, gamma-dimethyl-allyl-aminopurine, dihydrozeatin, dihydrozeatin riboside, dihydrozeatin-7-beta-D-glucoside, dihydrozeatin-9-beta-D-glucoside, dihydrozeatin-O-glucoside, dihydrozeatin-O-glucoside riboside, dihydrozeatin riboside-5'-monophosphate, dihydrozeatin-O-acetyl; N<sup>6</sup>-isopentenyladenine, N<sup>6</sup>-isopentenyladenosine, N<sup>6</sup>-isopentenyladenosine-5'-monophosphate, N<sup>6</sup>-isopentenyladenine-7-glucoside, N<sup>6</sup>-isopentenyladenine-9-glucoside, 2-methylthio-N<sup>6</sup>-isopentenyladenosine, 2-methylthio-N<sup>6</sup>-isopentenyladenine, 2-thio-N<sup>6</sup>-isopentenyladenine, 2-benzylthio-N<sup>6</sup>-isopentenyladenine, 2-isopentenylamine, kinetin, kinetin riboside, kinetin-9-glucoside, kinetin riboside-5'-monophosphate, meta-topolin, meta-topolin riboside, meta-topolin-9-glucoside, ortho-topolin, ortho-topolin riboside, ortho-topolin-9-glucoside, trans-zeatin,

trans-zeatin riboside, cis-zeatin, cis-zeatin riboside, trans-zeatin-7-glucoside, trans-zeatin-9-glucoside, trans-zeatin-O-glucoside, trans-zeatin-O-glucoside riboside, trans-zeatin riboside-5'-monophosphate, trans-zeatin-O-acetyl, 2-chloro-trans-zeatin, 2-methylthio-trans-zeatin, and 2-methylthio-trans-zeatin riboside.

5. (previously presented) The fermentation medium of claim 4 wherein the cytokinin is present in the fermentation medium at a concentration of at least 5.0 microM.
6. (original) The fermentation medium of claim 1 wherein the cytokinin-containing preparation comprises a plant extract.
7. (original) The fermentation medium of claim 6 wherein the plant is a member of the genus *Hordeum*.
8. (original) The fermentation medium of claim 1 wherein the cytokinin is present in the fermentation medium at a concentration effective to activate an AMP-activated protein kinase of the microorganism.
9. (original) The fermentation medium of claim 1 wherein the cytokinin is present in the fermentation medium at a concentration effective to increase uptake of a carbohydrate into the microorganism.
10. (original) The fermentation medium of claim 1 wherein the microorganism is a yeast and a member of the genus *Saccharomyces*.
11. (currently amended) The fermentation medium of claim 1 wherein the fermentation medium is a liquid and wherein the fermentation comprises production of at least one of ethanol or [[and]] carbon dioxide.
12. (original) The fermentation medium of claim 11 wherein the liquid is a beverage for human consumption.
13. (original) The fermentation medium of claim 1 wherein the fermentation medium is a dough and wherein the fermentation comprises production of carbon dioxide.

14. (currently amended) A method of increasing fermentation of a microorganism, comprising:
- providing a cytokinin-containing preparation, and providing a fermentation medium; and
- combining the fermentation medium with the cytokinin-containing preparation, wherein the cytokinin-containing preparation is present in the fermentation medium at a concentration of at least 1.0 microMolar to thereby increase fermentation of a microorganism;
- wherein the cytokinin is effective to increase conversion of one or more products in the fermentation medium to a desired product by the microorganism as compared to conversion in a medium without the cytokinin-containing preparation using otherwise identical fermentation conditions; and
- inoculating the fermentation medium with a fermenting microorganism.

15. (original) The method of claim 14 wherein the cytokinin-containing preparation comprises a cytokinin that includes an N<sup>6</sup>-substituted adenine or an optionally N<sup>6</sup>-substituted guanine.
16. (original) The method of claim 14 wherein the cytokinin-containing preparation comprises a cytokinin selected from the group consisting of N<sup>6</sup>-benzyladenine, N<sup>6</sup>-benzyladenosine, N<sup>6</sup>-benzyladenine-3-glucoside, N<sup>6</sup>-benzyladenine-7-glucoside, N<sup>6</sup>-benzyladenine-9-glucoside, N<sup>6</sup>-benzyl-9-(2-tetrahydropyranyl)adenine, N<sup>6</sup>-benzyladenosine-5'-monophosphate, N<sup>6</sup>-gamma, gamma-dimethyl-allyl-aminopurine, dihydrozeatin, dihydrozeatin riboside, dihydrozeatin-7-beta-D-glucoside, dihydrozeatin-9-beta-D-glucoside, dihydrozeatin-O-glucoside, dihydrozeatin-O-glucoside riboside, dihydrozeatin riboside-5'-monophosphate, dihydrozeatin-O-acetyl; N<sup>6</sup>-isopentenyladenine, N<sup>6</sup>-isopentenyladenosine, N<sup>6</sup>-isopentenyladenosine-5'-monophosphate, N<sup>6</sup>-isopentenyladenine-7-glucoside, N<sup>6</sup>-isopentenyladenine-9-glucoside, 2-methylthio-N<sup>6</sup>-isopentenyladenosine, 2-methylthio-N<sup>6</sup>-isopentenyladenine, 2-thio-N<sup>6</sup>-isopentenyladenine, 2-benzylthio-N<sup>6</sup>-isopentenyladenine, 2-isopentenylamine, kinetin, kinetin riboside, kinetin-9-glucoside, kinetin riboside-5'-monophosphate, meta-topolin,

meta-topolin riboside, meta-topolin-9-glucoside, ortho-topolin, ortho-topolin riboside, ortho-topolin-9-glucoside, trans-zeatin, trans-zeatin riboside, cis-zeatin, cis-zeatin riboside, trans-zeatin-7-glucoside, trans-zeatin-9-glucoside, trans-zeatin-O-glucoside, trans-zeatin-O-glucoside riboside, trans-zeatin riboside-5'-monophosphate, trans-zeatin-O-acetyl, 2-chloro-trans-zeatin, 2-methylthio-trans-zeatin, and 2-methylthio-trans-zeatin riboside.

17. (original) The method of claim 16 wherein the cytokinin is present in the fermentation medium at a concentration of at least 1.0 microM.
18. (original) The method of claim 14 wherein the cytokinin is present in the fermentation medium at a concentration effective to activate an AMP-activated protein kinase of the microorganism.
19. (original) The method of claim 14 wherein the cytokinin is present in the fermentation medium at a concentration effective to increase uptake of a carbohydrate into the microorganism.
20. (currently amended) The fermentation medium of claim 1 wherein the microorganism is a yeast and a member of the genus *Saccharomyces*, wherein the fermentation medium is a liquid, and wherein the fermentation comprises production of at least one of ethanol or [[and]] carbon dioxide.
21. (withdrawn) A method of marketing a product, comprising a step of providing information that a cytokinin increases fermentation of a microorganism.